

a survey and revision of the location of the old road from the city to Timonium, has been made.

With adequate funds, and consulting what was deemed at the time, judicious economy, this part of the road was laid out so as to avoid as much as possible all heavy excavations. In consequence, curves of 500, 400, and even less than 300 feet radi were admitted upon it; which however, in many cases were temporary only. The superstructure was composed of the yellow pine string piece, resting on cross sleepers, and surmounted by the plate-rail, which, from motives of economy was adopted on all roads at that time begun, and which for the same reason is still preferred on many rail roads in the country. This mode of providing a uniform, durable and permanent surface of railway, has proved by experience on this road at least, less efficient, more dangerous, and in the end more expensive than a structure in which the heavy edge rail would be substituted for the wooden string piece and flat bar.

When on the 25th April, 1829, the Directors of the Liverpool and Manchester railway offered a premium for "the most improved locomotive engine," among the conditions was that which limited the weight in "*working trim*" to six tons—at the same time it was stated that a lighter engine would be preferred. Since that period engines of 9 to 14 tons have been used and found to answer a better purpose on that and other roads; in consequence of this, stronger rails were requisite, and have been laid down. In this country corresponding changes will be made.

The flat bar has been found too weak and yielding to admit of a permanent fastening, or to sustain safely and economically the burthens over it: while the pine string piece has been subject to a rapid decay; such decay as in fact does not naturally belong to the yellow pine of the south, and which I attribute to error or imposition in obtaining defective wood: for I am sure most, if not all, of the string pieces were cut from trees which had previously been *bled*—a process by which the turpentine is extracted from the standing trees, and the wood deprived of that principle which enables it to resist decay. When used at all, great care is requisite to insure the delivery of the native unimpaired *fat* pine.